7-2-2008

Earth and Moon [5th grade]

Trinity University

Canyon Ridge Elementary School (San Antonio, Tex.)

Unit: Earth and Moon
Grade: 5th

Stage 1: Desired Results

Understandings

Students will understand that…
-there are similarities and differences in physical characteristics between the earth and moon
-force of gravity keeps planets and moon in orbit
-difference between revolution and rotation
- the sun has specific features
-moon phases

Essential Questions	Knowledge & Skill
How are the earth and moon alike? Different? How do cycles affect earth? What role does gravity play in the universe? What are the features of the sun? How does the sun affect the universe?	*(NEISD scope & sequence; TEKS; Core; etc.)* **5.12C** – identify the physical characteristics of the Earth and compare them to the physical characteristics of the moon. **5.12D** – Identify gravity as a force that keeps planets in orbit around the Sun and the moon in orbit around the Earth **5.6A** – Identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles.

Stage 2: Assessment Evidence

Performance Task:

1. Students will create a model or project of solar system, sun, and moon. (assess with rubric)
2. Students will complete a monthly lunar calendar.

Other evidence:

1. *Put cycle cards in order.*
2. *Monthly moon chart.*
3. *Put planets in order.*
4. *Quizzes-throughout the unit*

Stage 3: Learning Activities

1. Science Notebook – students will keep a scrapbook of notes, experiments, and learning activities for the Earth, Sun, and Moon Unit
2. Bill Nye – solar system (review 3.11 C)
3. S & K Associates – *Order the Planets*, students read clues to place planets in order
4. Beach ball, baseball, ping pong activity to demonstrate revolution/rotation (WB174 with science test)
5. Read D6-D11 in 5th grade Science textbook
6. FOSS Planetary Science, Investigation 3
7. Using characteristic cards of Earth and Moon- students sort cards and place on Venn Diagram
8. KRLN/Unitedstreaming video Moon and Earth characteristics- refer back to Venn diagram to make

corrections.

9. Crater Activity – FOSS Planetary Science, Investigation 5
10. Earth vs. Moon quiz
11. Moon Book by Gail Gibbons – read aloud to introduce phases of the mooon
12. Moon rotation activity to show phases – Styrofoam, flashlight, and lamp (discuss seasons, tides) (textbook)
13. Students will read "What Causes Tides" – NEISD teacher only
14. Lunar Eclipse activity – Evan Moor Exploring Science, page 55
15. Moon phases calendar – students will keep a record of the phases of the moon for an entire month
16. D30 – D35 Sun's energy and layers & Bill Nye on Sun
17. Drawing a cross section of the sun –labeling all physical features (assess with rubric)
18. Eclipse of the Sun activity – Evan-Moor Exploring Science, page 22
19. Using note sheet review characteristics of the sun
20. Use Sciencesaurus (Great Source Education Group) to complete the reading guide.

Additional activities:
Jeopardy

Rubric for Project

Name:

Date:

List the materials used for the project:

	Total points	Points earned
Model completed on time	10	
Planets are in order	20	
Labels are accurate	20	
Model Representation is accurate	20	
Presentation in class	20	
Creativity and neatness	10	

Grade: _____

Comments:

	A	B	C	D
$100	The word that means to spin.	These two structures are both made of rock.	To travel in a closed path around an object.	The path a body in space takes as it revolves around another body.
$200	The name of the scientist who first used a telescope to explore space.	The shape of the moon's and earth's orbit.	Name the force that keeps the planets in orbit around the sun.	This occurs when the Earth or moon passes into the other's shadow.
$300	An artificial or natural body that orbits another object.	The cause of moonlight.	The characteristic of the earth that causes it to have greater gravity than the moon.	A robotic vehicle used to explore deep space.
$400	The time it takes for the moon to rotate and revolve one time.	Name the three main landforms on the moon.	Define a system.	The imaginary line that the Earth turns on.
$500	Draw a solar eclipse.	Draw a lunar eclipse.	Draw the correct orbital relationship between the earth and the moon.	List the moon phases in order.

Moon Phase Monthly Project

100	The calendar is complete. The moon phases are shaded correctly; i.e. the shadow and light pattern clearly moves from right to left. The full moon and new moon are in the correct position.
85	The calendar is complete. There are minor errors in the moon phase shading, but the full moon and new moon are in the correct position.
75	The calendar is complete. There are moon phase shading errors in several spots. The full moon and new moon are in the correct position.
65	The calendar is complete, but has significant errors. The moon phase pattern is incorrect. The full moon and new moon may or may not be in the correct position.
50	The calendar may or may not be complete. There are significant errors in the shading pattern. The full moon and new moon are not in the correct positions.

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NAME:
Date:

Scavenger Hunt - ScienceSaurus

Pages 226 -233

1. The _____ is in the center of our solar system. Everything _____around the sun.
2. The sun is mostly made up _____ gas.
3. How long does it take the Sun to rotate?
4. _____is a force that pulls objects toward each other.
5. An _____ is the path one object takes around another object.
6. One trip around the sun is called a _____.
7. One revolution around the sun is the planet's _____.
8. TRUE or FALSE Planets are larger than the sun.
9. _____is the largest planet.

Using the information that you read about the planets, answer the following questions.

10. Which planet's atmosphere is made up hydrogen, helium, and methane gas?
11. Evidence shows that Neptune's surface is made up of rock, _____ water, and frozen _____.
12. Which planet has the largest set of rings?
13. Why do we call Mars the "Red planet"?
14. TRUE or FALSE Asteroids do not have an atmosphere.

Fill out the chart using the information in the book.

Planet	Diameter	Length of day	Length of year	Distance from the sun	Known moons
Mercury					
Venus					

Earth	12,756 km	24 hours	365 days	150 million kilometers	one
Mars					
Jupiter					
Saturn					
Uranus					
Neptune					
Pluto					